

Work Order ID 48578

Friday, June 26, 2009 10:38:59 AM



Page 1

Item ID: D350-748-101

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Fwd

Start Date: 7/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

N/A	Rev D
-----	-------

100 0.00



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile & type labels per PPPD350-748-101

CHG001

for BG 09/09/01
Sorbia

110 0.00



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT _____

0.00

9-2-17

120 0.00



QC

Quality Control

QC15- Crosstube Dimensional Check

Memo

0.00

10
0907-20

648578

Work Order ID 48578

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Page 2

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Crosstubes	0.00							
	Crosstubes	0.00							
Crosstubes	<div><div>Memo</div><div>1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B & C Drill Jigs, <input type="checkbox"/> Set-up drill table as per QSI 010 <input type="checkbox"/> 2-Deburr <input type="checkbox"/> 3-Engrave Part # and Batch # as per Dwg D350-748-141 <input type="checkbox"/> 4-Remove all marks from tube within limits of D350-748- 141 <input type="checkbox"/> 5- Apply a light coat of</div></div>	0.00							
140	QC5- Inspect part completeness to step on W/O	0.00							
	QC	0.00							
Quality Control	<div><div>Memo</div><div>CHECK 10 DEG HOLES WITH DT8876E(EUROCOPTER CLAMP)</div></div>	0.00							
150	Outsource process-Cadplate per QSI017 4.1.9.1	0.00							
	Outsource3	0.00							
Outsource process - Cad plate	<div><div>Memo</div><div>Issue P/O: 10132 <input type="checkbox"/> Stress relief at 375° for 5 hours <input type="checkbox"/> Magnetic Particle Inspect per ASTM E1444 <input type="checkbox"/> Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2 <input type="checkbox"/> Embrittle relief at 375° for 8 hours, Chromate Treat <input type="checkbox"/> Possible Supplier: Southwest United Industries <input type="checkbox"/> Ens</div></div>	0.00							

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Start Date: 7/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure certificate of conformity is attached

PC 9/8/18 *(Signature)*

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

27 802/06/05

180

SprayPaint

0.00



SprayPaint

Memo

0.00

Spray Painting

1-Prime inside crosstube as per QSI 005 4.2 2-Prime Outside of Tube as per
Dart QSI 005 4.2*Prime 8:00 10:30*
*Paint 3:00 4:30**ST 09-08 -25*

Work Order ID 48578

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Item ID: D350-748-101

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Fwd

Start Date: 7/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev. Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190



QC14- Inspect Spray Paint

0.00

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

1 06-08-26

200



Crosstubes

0.00

Crosstubes

Memo

0.00

Crosstubes

1-Install Ground wire Insert, then insert screw and washer □ 2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035. □ 3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-LBS

09 08 28 ①

210



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

27 S 07/08/31

QC 07/08/31

Work Order ID 48578

Page 5

Friday, June 26, 2009 10:38:59 AM

Item ID: D350-748-101

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Fwd

Start Date: 7/15/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 8/3/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Pick Kit	0.00							
Packaging	Memo	0.00							
Packaging									
230	QC4- 100% Inspect kits for completeness	0.00							
QC	Memo	0.00							
Quality Control									
240		0.00							
Packaging									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-748-101								
	Location: _____								
	□ PPP Rev: <u>B</u>								

Picklist Print

Page 1

Friday, June 26, 2009 10:38:58 AM

Work Order ID: 48578



Parent Item: D350-748-101RevD



Parent Item Name: Crosstube Installation, High Fwd

Start Date: 7/15/2009

Required Date: 8/3/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
S ✓ MS21042L5 		Purchased	No			120	Each	0.0000	4.0000			
Nut ✓ ALS4-1032-225 		Purchased	No			200	Each	0.0000	1.0000			
Insert ✓ AN960JD10 		Purchased	No			200	Each	0.0000	1.0000			
Washer ✓ D2856-400RevA 		Manufactured	No			200	f	0.0000	1.2432			
Abraison Strip ✓ D3502-1RevB 		Manufactured	No			200	Each	0.0000	2.0000			
Support D350-748- 141TRNRevD B-47158 		Manufactured	No			200	Each	0.0000	1.0000			
Crosstube Turning Detail ✓ MS21920-20 		Purchased	No			200	Each	0.0000	2.0000			
Clamp (per MIL-DTL-8783C) ✓ AN4-6A 		Purchased	No			230	Each	0.0000	16.0000			
Bolt ✓ AN5-32A 		Purchased	No			230	Each	0.0000	4.0000			
Bolt												

1111636 9-8-3154

110768 09-08-28

111668 09-08-28

50593 09-08-28

47120 09-08-28

48578 54 9/8/31

111281 09-08-28

111279 54

1111916 54

~~Screen MS21920-20-1-10~~

~~B-47158~~

Picklist Print

Page 2

Friday, June 26, 2009 10:38:58 AM

Work Order ID: 48578



Parent Item: D350-748-101RevD



Parent Item Name: Crosstube Installation, High Fwd

Start Date: 7/15/2009

Required Date: 8/3/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD416 		Purchased	No	Ⓟ		230	Each	0.0000	32.0000			
Washer AN960JD516 		Purchased	No	Ⓟ		230	Each	0.0000	8.0000			
Washer D3501-1RevA 		Manufactured	No	Ⓟ		230	Each	0.0000	16.0000			
Bushing MS21042L4 		Purchased	No	Ⓟ		230	Each	0.0000	24.0000			
Nut MS27039-1-10 		Purchased	No	Ⓟ		230	Each	0.0000	1.0000			
Screw 												

M111916 9-8-3 SP

M112082 9-8-31 SP

E 45402 9-8-31 SP

M110507 9-8-31 SP

111425 09 08 28

①

47350 ③

13500-1 qty 4 Batch: 47391 SP

1AN4-41A qty 8 Batch: M111279 SP 9/8/31

11/09/08/31

PTO
PTO

Date: Monday, 15/06/2009 9:50:29 AM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 350/355 AS X-TUBE FWD
Job Number : 48578	
Estimate Number : 12485	
P.O. Number :	Part Number : D350748101
This Issue : 15/06/2009 S.O. No. :	Drawing Number : N/A
Prsht Rev. : NC	Project Number : N/A
First Issue : // Type : CROSSTUBES	Drawing Revision : D
Previous Run : 48577	Material :
Written By :	Due Date : 10/07/2009 Qty: 1 Um: Each
Checked & Approved By : <u>JLD 09-06-15</u>	
Comment : Est Rev:A New Issue 06-07-05 JLM Est Rev:B Update qty of MS21042L5 06-09-12 KJ Est Rev:C Rev B 07-11-15 DD Est Rev D Combined manufacturing 08.04.02 EC verified by: DD Est Rev:E 08-06-24 revD as per dwg DD verified by:EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	✓ DC	DOCUMENT CONTROL
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Comment: Photocopy bluefile & type labels per PPPD350-748-101 CHG001

2.0	✓ D350748141TRN	Crosstube Turning Detail
-----	-----------------	--------------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)
 CROSSTUBE TURNING DETAIL

batch

3.0	✓ BENDING	BENDING MACHINE - SKIDTUBES
-----	-----------	-----------------------------



Comment: BENDING MACHINE

✓ Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT

MP 09-07-20 (LX)

4.0	✓ QC15	DIMENSIONAL CHECK OF X-TUBES
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Comment: DIMENSIONAL CHECK OF X-TUBES

5.0	✓ CROSSTUBES	CROSSTUBES RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Drill Tube as per Dwg D350-748-141 Using DT8876 A,B & C Drill Jigs,
 Set-up drill table as per QSI 010

2-Deburr

MP
11 09 7 20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 15/06/2009 9:50:29 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 48578

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

3-Engrave Part # and Batch # as per Dwg D350-748-141

1 M 9-7-20

4-Remove all marks from tube within limits of D350-748-141

5- Apply a light coat of LPS3 on the interior of tube

Batch: M109956

ANM 9-7-20 J

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

CHECK 10 DEG HOLES WITH DT8876E(EUROCOPTER CLAMP)

S 09/07/21 @

7.0

OUTSIDE SERV.11

OUTSIDE SERVICE -CROSSTUBES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: _____

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

2-Prime Outside of Tube as per Dart QSI 005 4.2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 15/06/2009 9:50:29 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 48578

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

✓ QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

12.0

✓ D35021

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
SUPPORT

Batch: _____

13.0

✓ D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s)
Abrasion Strip 7.10" long x2

Batch: _____

14.0

✓ ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: _____

15.0

✓ AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: _____

16.0

✓ MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Clamp (per MIL-DTL-8783C)

Batch: _____

17.0

✓ MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Screw

Batch: _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 15/06/2009 9:50:29 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 48578

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

✓ CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert,then insert screw and washer

2-Install Abraison strips as per Dwg D350-748-141 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-141,Torque to 60-80 IN-LBS

19.0

✓ QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

20.0

✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

21.0

✓ D35001

Saddle



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

350 SADDLE

Batch: _____

22.0

✓ D35011

Bushing



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

BUSHING

Batch: _____

23.0

✓ AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Bolt

Batch: _____

24.0

✓ AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

bolt

Batch: _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 15/06/2009 9:50:29 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 48578

Part Number: D350748101

Job Number:



Seq. #:	Machine Or Operation:	Description :
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25.0

✓ AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: _____

26.0

✓ AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s)

Washer

Batch: _____

27.0

✓ AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: _____

28.0

✓ MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

Nut

Batch: _____

29.0

✓ MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: _____

30.0

✓ QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

31.0

✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-101

Location: _____

PPP Rev: _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 15/06/2009 9:50:29 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 48578

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

✓ QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion

✓



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

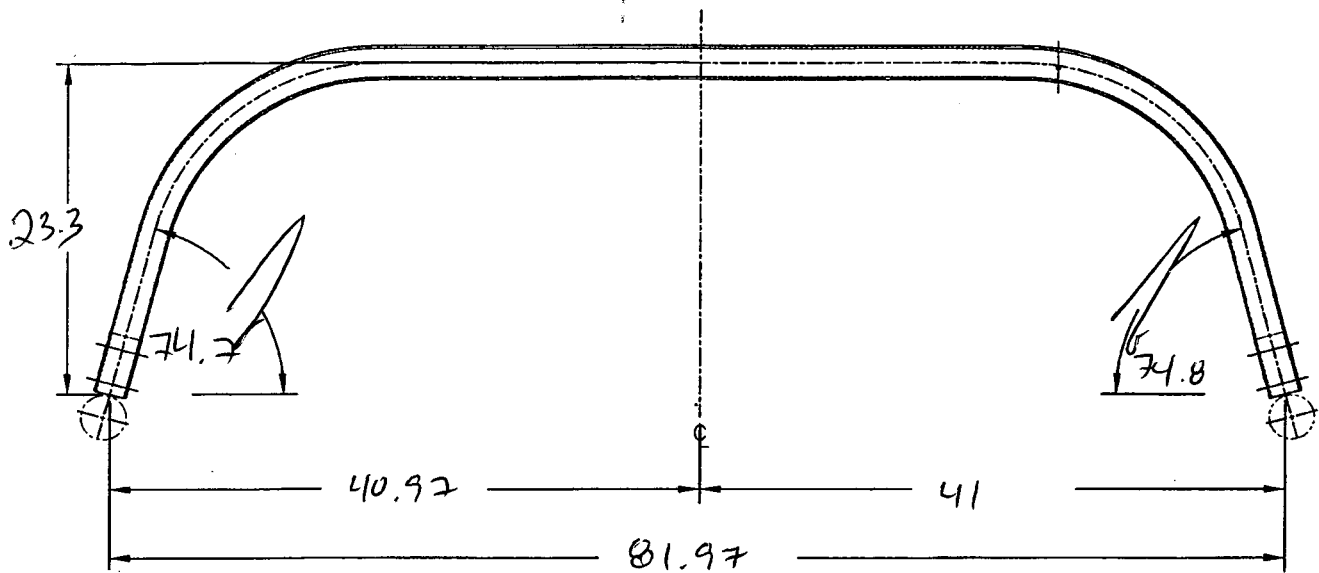
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 48578
Description: Crosstube High Fwd (AS350/355)		Part Number: D350-748-101
Inspection Dwg: D350-748-141 Rev: D		Page 1 of 1

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments
0.240 twist from left to right

QC15 Inspection	<i>[Signature]</i> 0907.20
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>

DART

RELEASED

06.10.31

DESIGN 92	DRAWN BY 92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. D350-748-141	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI FWD)	SCALE NTS
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6017-115 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

QTY	P/N	DESCRIPTION
X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
1	D6017-115	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

D350-748-141 CROSSTUBE:

- 1) MATERIAL: MANUFACTURED FROM D6017-115 OR D6015-125
FINISHED LENGTH = 110.27±0.06
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
- 6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.

UNDER REVIEW

09.02.05

PER PCR #09.001

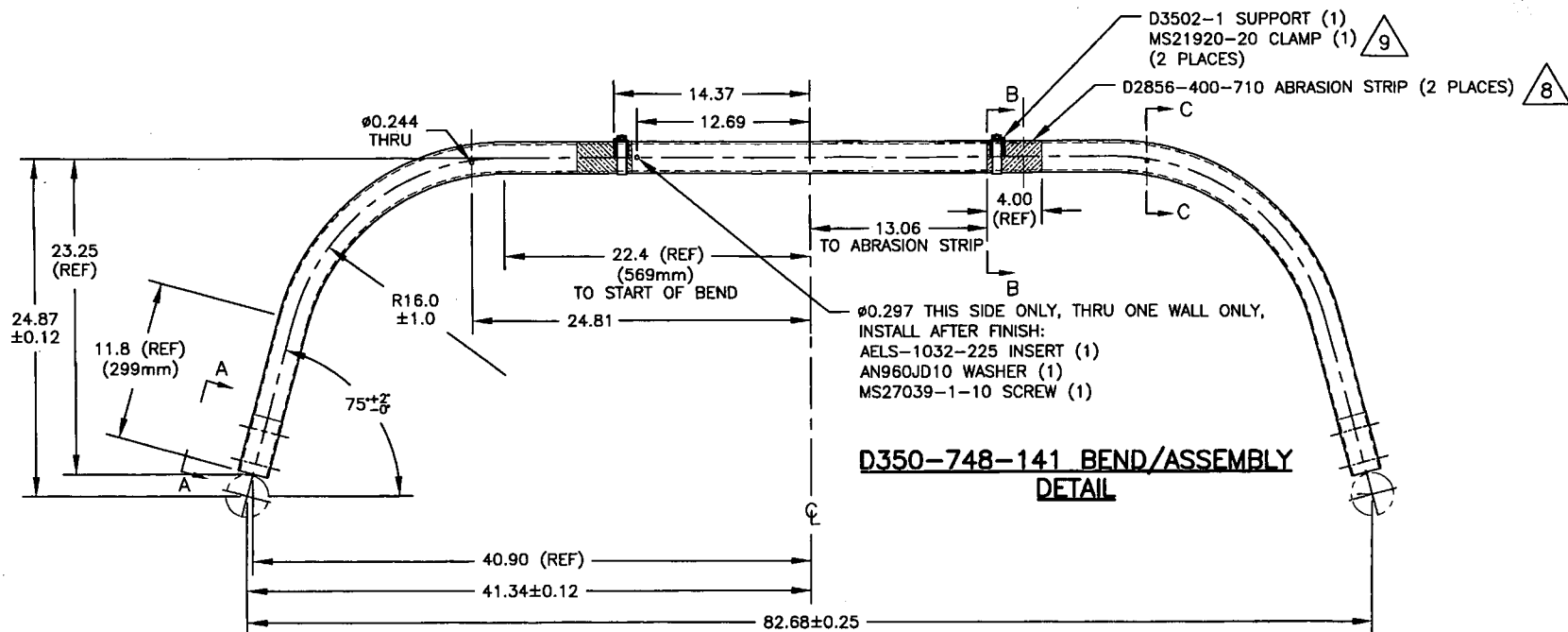
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OF WORK ORDER
48518

UNDER REVIEW

OK 07.10.22

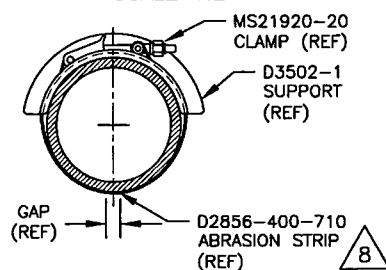
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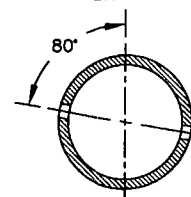
SECTION B-B

SCALE 1:2



SECTION C-C

SCALE 1:2



UNDER REVIEW

09.02.05

UNDER REVIEW

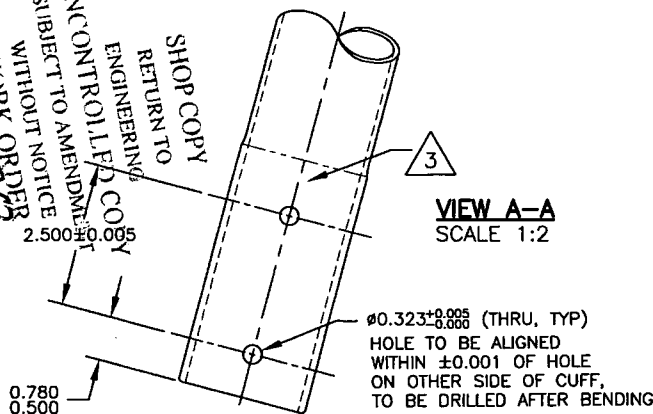
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OK 07.10.22

RELEASED

06.10.31

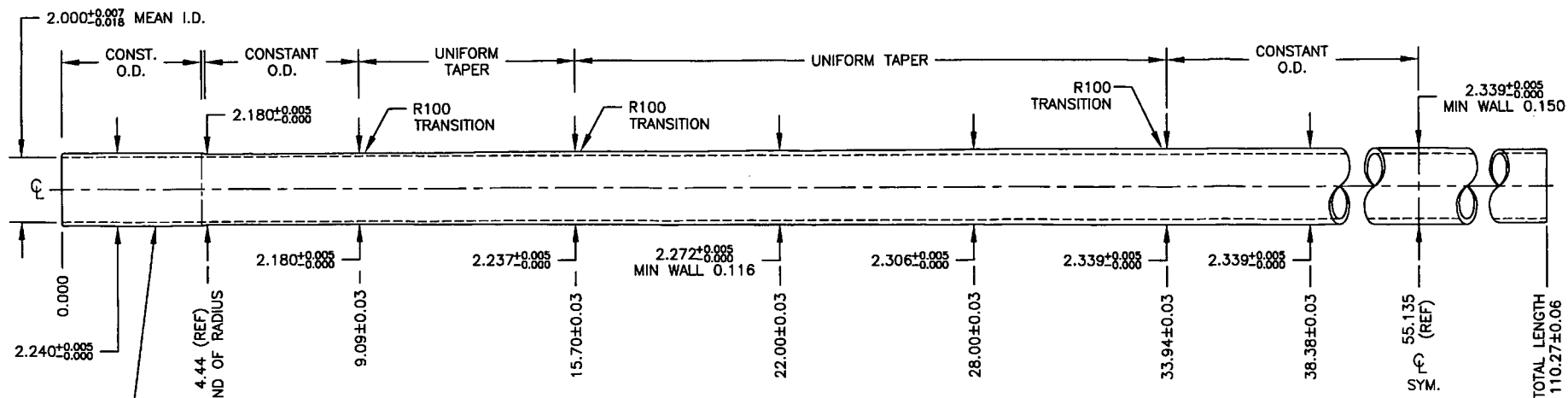
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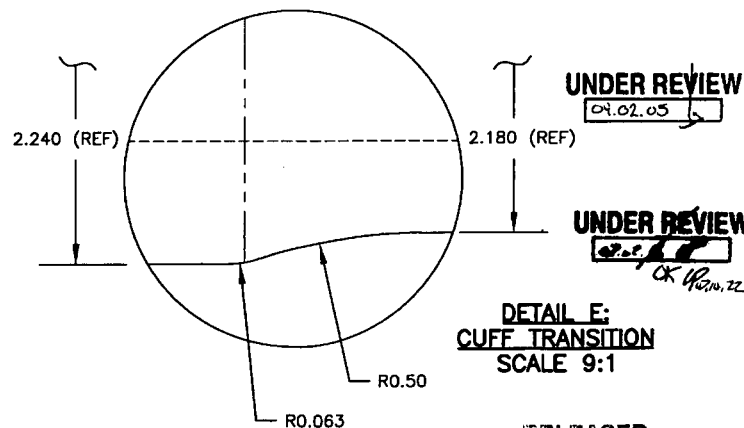
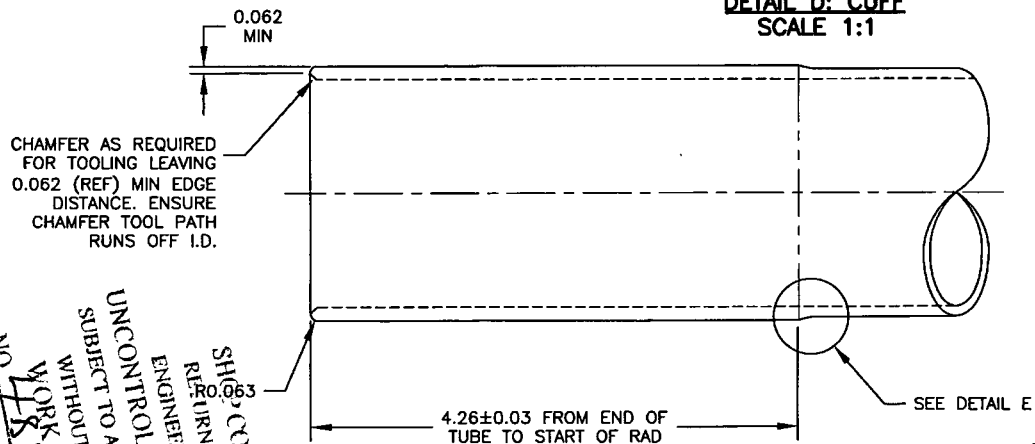
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DESIGN	q	DRAWN BY	q	DART	DART AEROSPACE LTD. MILLSBORO, ONTARIO, CANADA
CHECKED	#	APPROVED	#	DRAWING NO.	D350-748-141
DATE	06.10.31	TITLE	CROSSTUBE (AS 350/355 HI FWD)	REV. D	SHEET 2 OF 3
				SCALE	1:8



D350-748-141 MACHINING DETAIL

DETAIL D: CUFF SCALE 1:1



DETAIL E: CUFF TRANSITION SCALE 9:1

RELEASED

06.10.31

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DESIGN	q	DRAWN BY	q	DART	DART AEROSPACE LTD. HAMPSHIRE, ONTARIO, CANADA
CHECKED	#	APPROVED	#	DRAWING NO.	D350-748-141
DATE	06.10.31	TITLE	CROSSTUBE (AS 350/355 HI FWD)	SCALE	1:3

REV. D

SHEET 3 OF 3

NO. 48528
WORK ORDER
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**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Aug-14-2009

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 88572
INVOICE #: 45705

**CONTRACT OR
PURCHASE ORDER #** 513963

DESCRIPTION: SKID

QTY 1

P/N # d350-748-101

S/N # B48578

**STRESS RELIEF BAKE @ 375 DEG. FOR 5 HRS. BAKE HEAT CHART
#10734. MPI INSPECTED IAW ASTM-E-1444. CADMIUM PLATED IAW
AMS-QQ-P-416B, TYPE 2 YELLOW, CLASS 2. BAKE HEAT CHART
#10785.**

S *08/16/05*

**CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.**

Approved Inspector:



[Handwritten signature]

5.0 PARTS LIST

Qty -101	Qty -201	Part Number	Description
X		D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X	D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
1		D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1	D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
*2	*2	D3502-1	SUPPORT
*2	*2	D2856-400-710	ABRASION STRIP
*1	*1	AELS-1032-225	INSERT
*2	*2	MS21920-20	CLAMP
*1	*1	MS27039-1-10	SCREW
*1	*1	AN960JD10	WASHER
4	4	D3500-1	SADDLE
16	16	D3501-1	BUSHING
16	16	AN4-6A	BOLT
8	8	AN4-41A	BOLT
4	4	AN5-32A	BOLT
32	32	AN960JD416	WASHER
8	8	AN960JD516	WASHER
24	24	MS21042L4	NUT (OR MS21042-4)
4	4	MS21042L5	NUT (OR MS21042-5)

* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/241 ASSEMBLIES ABOVE

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Revision: **B**

Date: 07.06.15